Problems for Points 5.06, 5.08 and 5.11

1. At a grocery store, the cashier asks John if he wants to join the store's Super Savings Club. It costs $30.00 to join. The club entitles members to a 15% discount off the original price of groceries.

   a. Suppose d is John's total cost of groceries without a membership. Find a rule
      C(d) for John's total cost of groceries with a membership. Include the $30.00 membership fee.

   $$C(d) = 0.85d + 30$$

   c. How much does John have to spend on groceries to make joining the club worth the
      membership fee?

   $d > 0.85d + 30$
   $\quad -0.85d \quad -0.85d$
   $\quad 0.15d > 30$

   $d > 200$ John has to spend
   More than $200.

2. Miranda collects money for entries in the Fall Harvest Fun Walk and the 5K Run. An entry in the Fun Walk costs $3.00. An entry in the 5K Run costs $10.00. Miranda counts 210 entries in all.

   a. Miranda hopes to get 75 entries in the 5K Run. If she reached her goal, how much money did she collect?

   $3(210 - 75) + 10(75)$
   $3(135) + 10(75)$
   $405 + 750$
   1155

   (She raised $1155.)

   b. After counting the money, Miranda has $1260. How many 5K Run entries are there? Did she reach her goal?

   $1260 = 3(210 - R) + 10R$
   $1260 = 630 - 3R + 10R$
   $1260 = 630 + 7R$

   $\quad\frac{630}{7} = \frac{7R}{7}$

   $90 = R$

   Let R be the number of 5K Run entries
   (Yes, she reached her goal.)

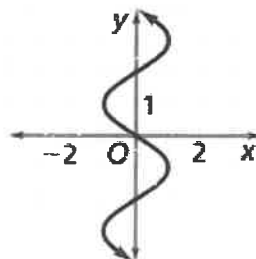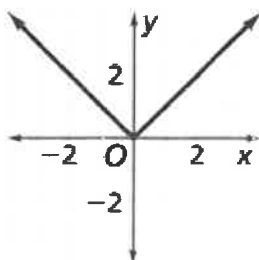3. Complete each table and decide if it represents a linear function. Answer yes or no.

   a. _____yes_____

Input	Output	Δ
0	1	3
1	4	3
2	7	3
3	10	3
4	13	

   b. _____No_____

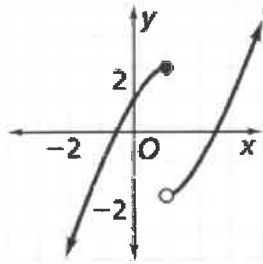| Input	Output	Δ
0	-4	0
1	-4	2
2	-2	4
3	2	6
4	8	

4. Determine if the graph is a function. Then write yes or no on the line.

   a. _yes_

   b. _no_

c. ___Yes___

d. ___Yes___
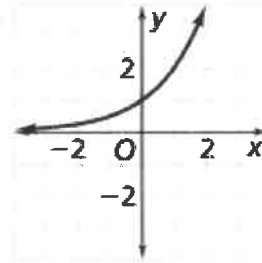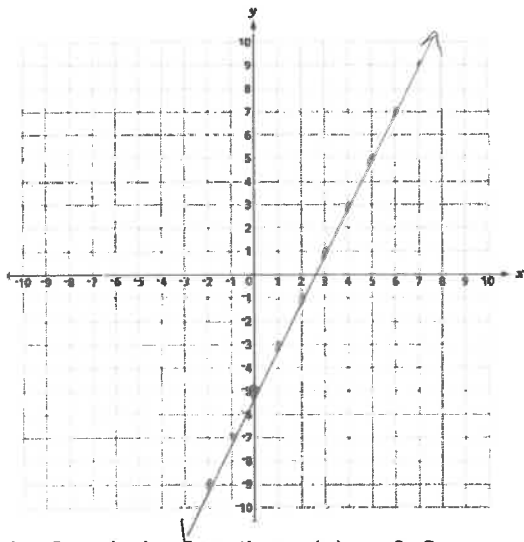

5. Graph the function f(x) = 2x − 5.

6. Graph the function g(x) = x²- 3.